

# TRENDS IN SYPHILIS TESTING AND INCIDENCE AMONG GAY AND BISEXUAL MEN ATTENDING SEXUAL HEALTH AND PRIMARY CARE SERVICES IN AUSTRALIA

**BETWEEN 2012-2019**

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## Background

Syphilis notifications have increased among gay and bisexual men (GBM) in Australia over the past decade. Changes in testing, condom use and increased sex between GBM of different HIV-statuses following PrEP implementation may influence transmission. We analysed trends in syphilis testing and incidence among GBM attending sexual health and GP services in Australia.

## Methods

Data were extracted from 31 services participating in the ACCESS surveillance network. We calculated the annual syphilis testing rate (GBM tested/GBM attended) and mean number of tests/person (among those tested) from 2012-2019. Using repeat testing methods we estimated annual incidence rates of infectious syphilis among GBM with  $\geq 2$  tests between 2012-2019. Data were disaggregated by HIV-status (time-varying), and HIV-negative GBM were split into ever-PrEP-users (any evidence of PrEP during 2012-2019, retrospectively categorised before PrEP-initiation) and never-PrEP-users.

## Results

From 2012-2019, annual testing rate increased among HIV-positive GBM (77% [3,977/5,139] to 79% [5,867/7,409],  $P=0.023$ ), HIV-negative never-PrEP-users (65% [10,058/15,549] to 70% [17,438/24,839],  $P<0.001$ ) and ever-PrEP-users (67% [3,695/5,535] to 85% [15,287/17,973],  $P<0.001$ ). Mean number of tests/person/year increased among ever-PrEP-users (1.7 to 2.7) and slightly among never-PrEP-users (1.4 to 1.5), however decreased among HIV-positive GBM (2.5 to 2.2)(all  $P<0.001$ ). Among 8,543 HIV-positive GBM (43,056 person-years), incidence fluctuated from 2012-2019, however increased overall from 6.0/100py-9.1/100py ( $P$ -trend=0.002). Among 36,924 HIV-negative never-PrEP-users (107,602 person-years), incidence remained stable from 2012-2017, then increased to 2.3/100py in 2019 ( $P$ -trend<0.001). Among 21,114 HIV-negative ever-PrEP-users (80,858 person-years), incidence increased from 1.6/100py to 6.8/100py from 2012-2019 ( $P$ -trend<0.001).

**Conclusions**

Syphilis incidence is increasing among all groups of GBM. Although incidence was increasing among PrEP users prior to PrEP rollout in 2016, recent increases are most prominent in this group and appear to be approaching levels historically seen among HIV-positive GBM. Despite increases in testing driven largely by PrEP uptake, testing has likely not reached the threshold required to curtail increasing syphilis transmission in Australia.

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